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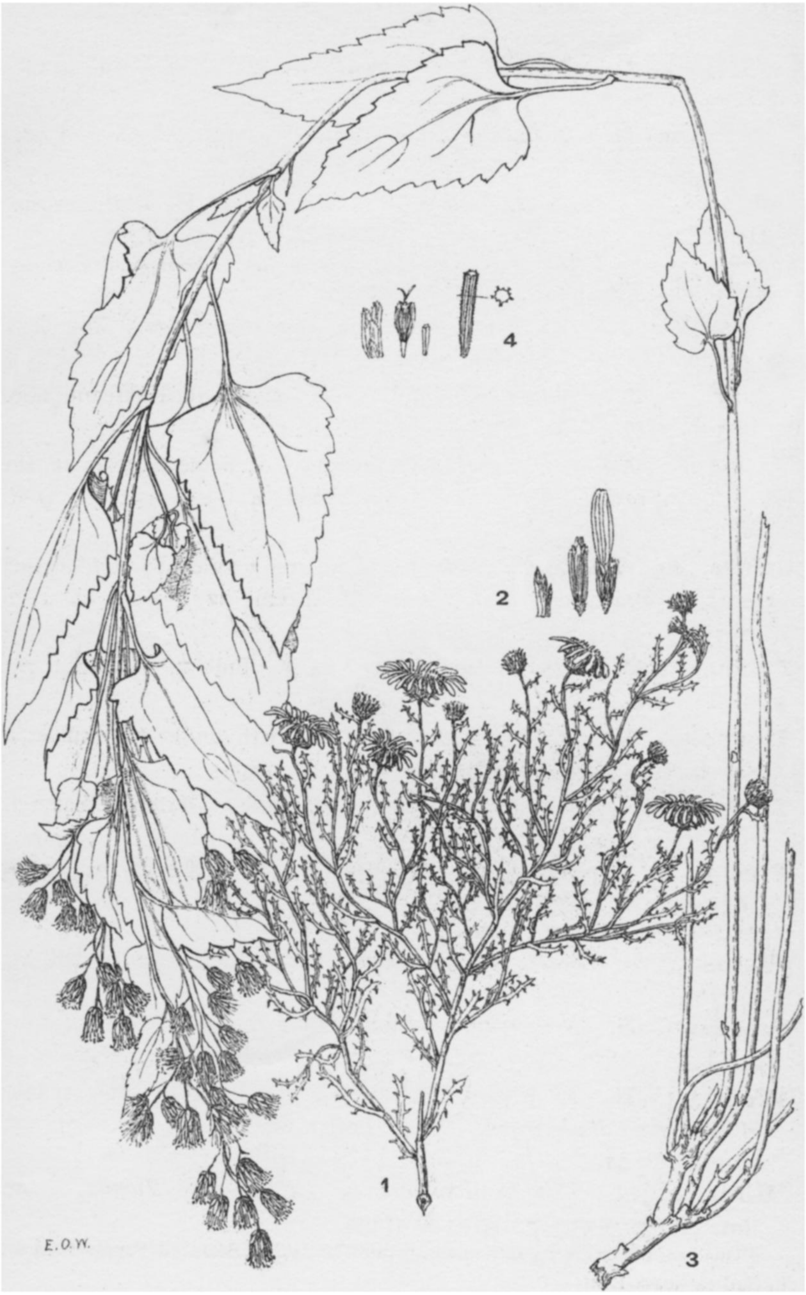
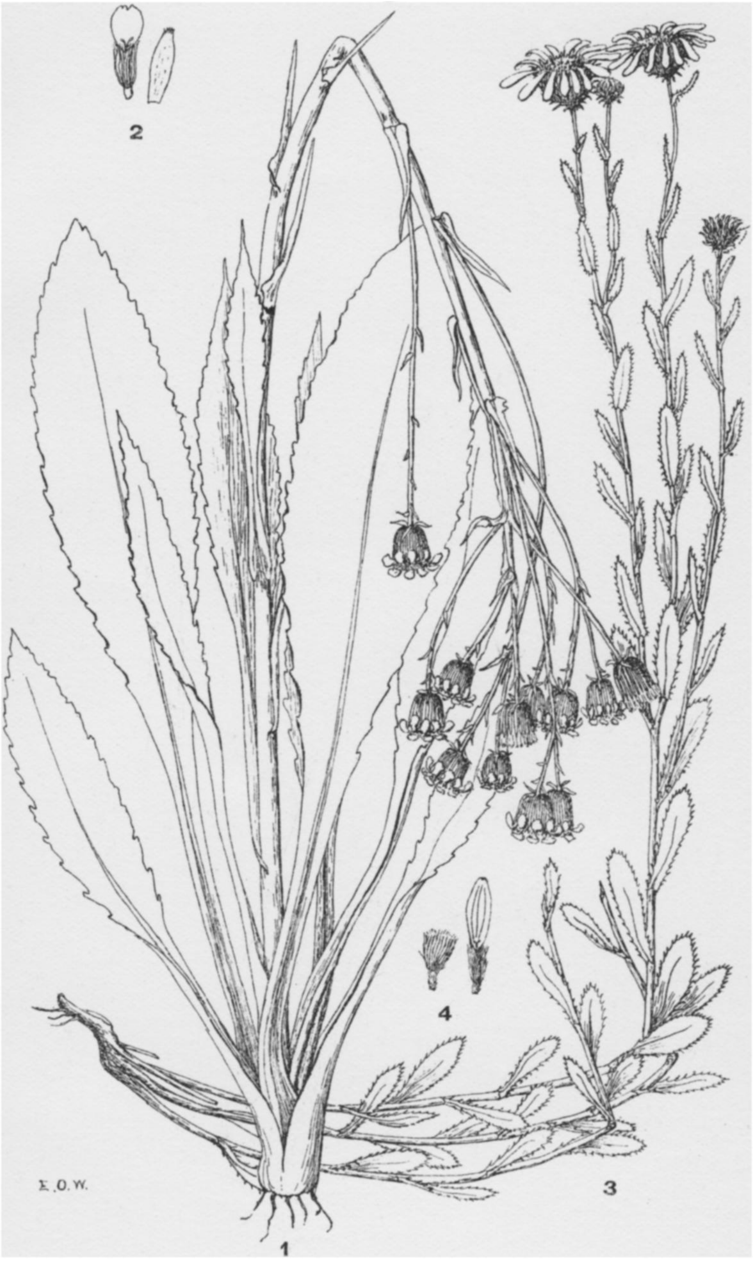


1, 2. ERIOCARPUM WOOTONI Greene.
3, 4. COLEOSANTHUS AMBIGENS Greene.

THE HELIOTYPE PRINTING CO., BOSTON



1, 2. SENECIO WOOTONI Greene.

3, 4. ERIOCARPUM SERRATUM Greene.

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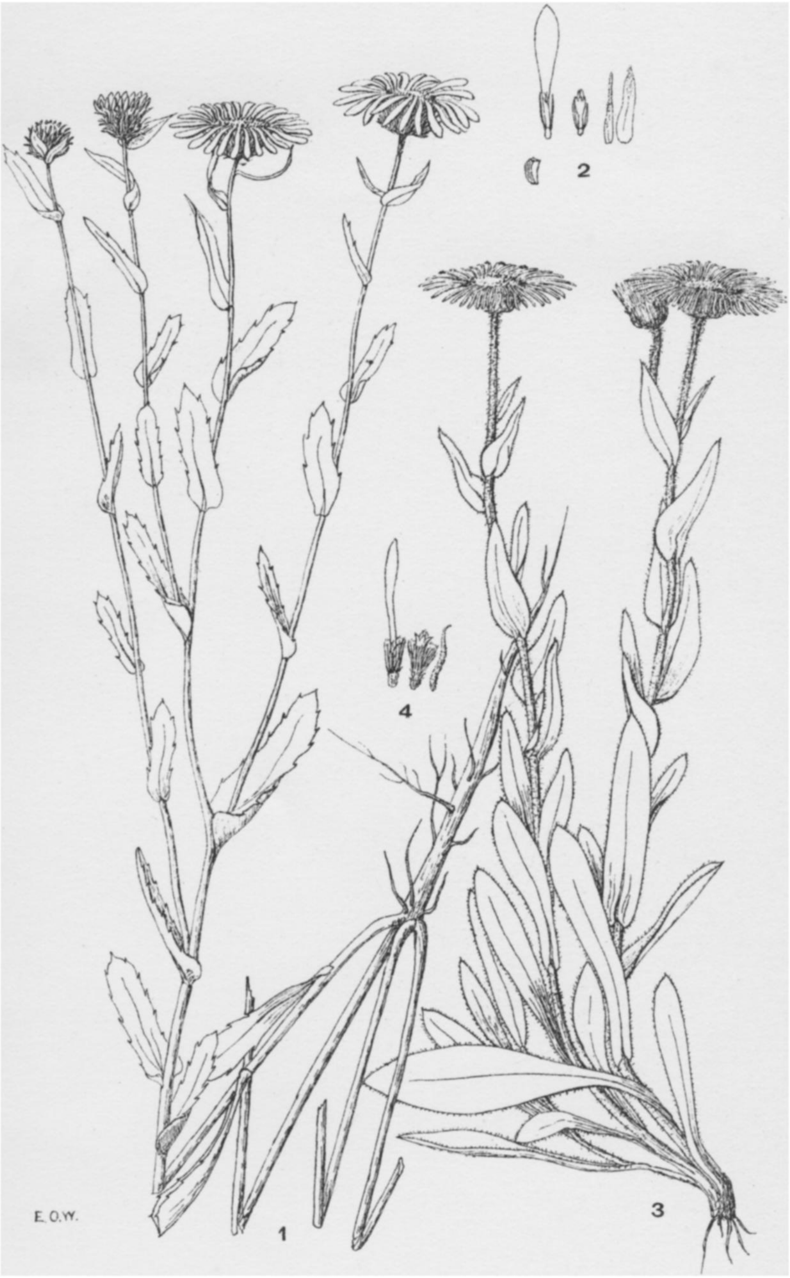

1, 2. GRINDELIA SCABRA Greene.
3, 4. ERIGERON FORMOSISSIMUS Greene.

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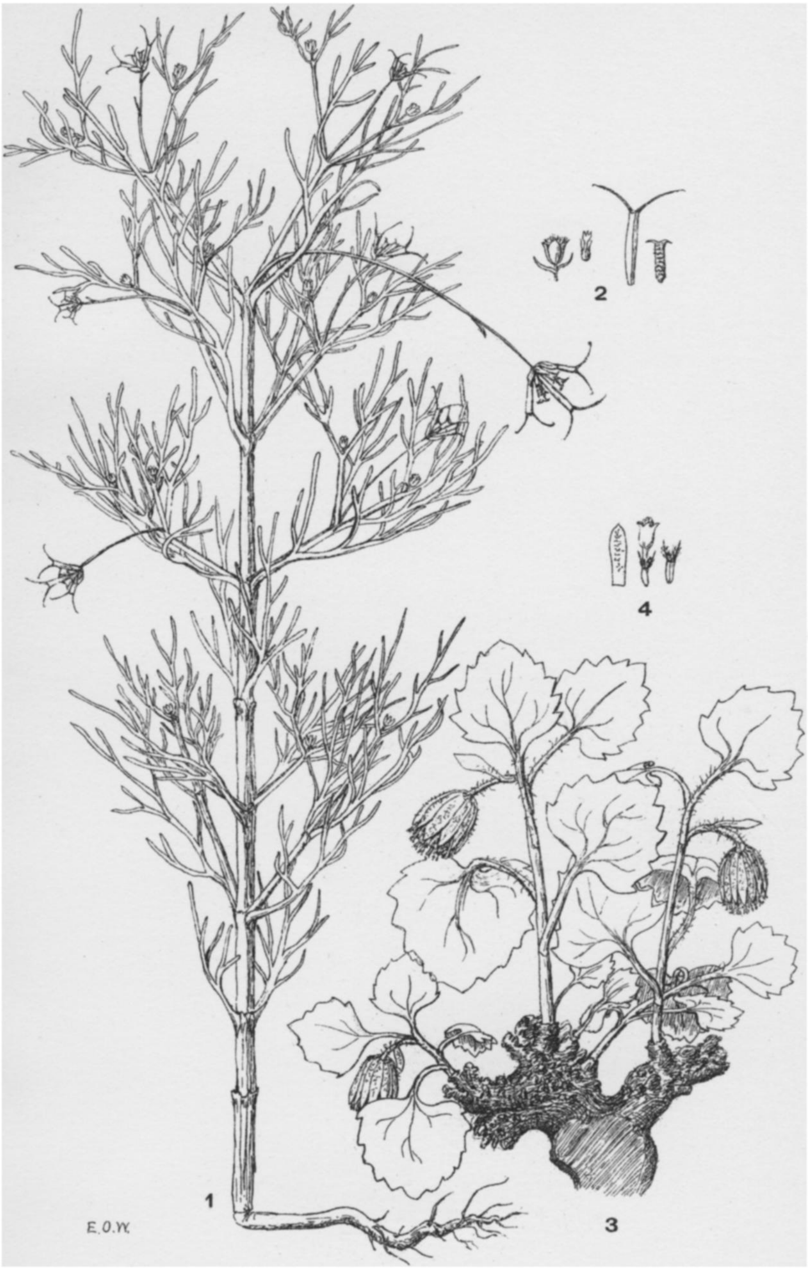

1, 2. WOOTONIA PARVIFLORA Greene.
3, 4. LAPHAMIA CERNUA Greene.

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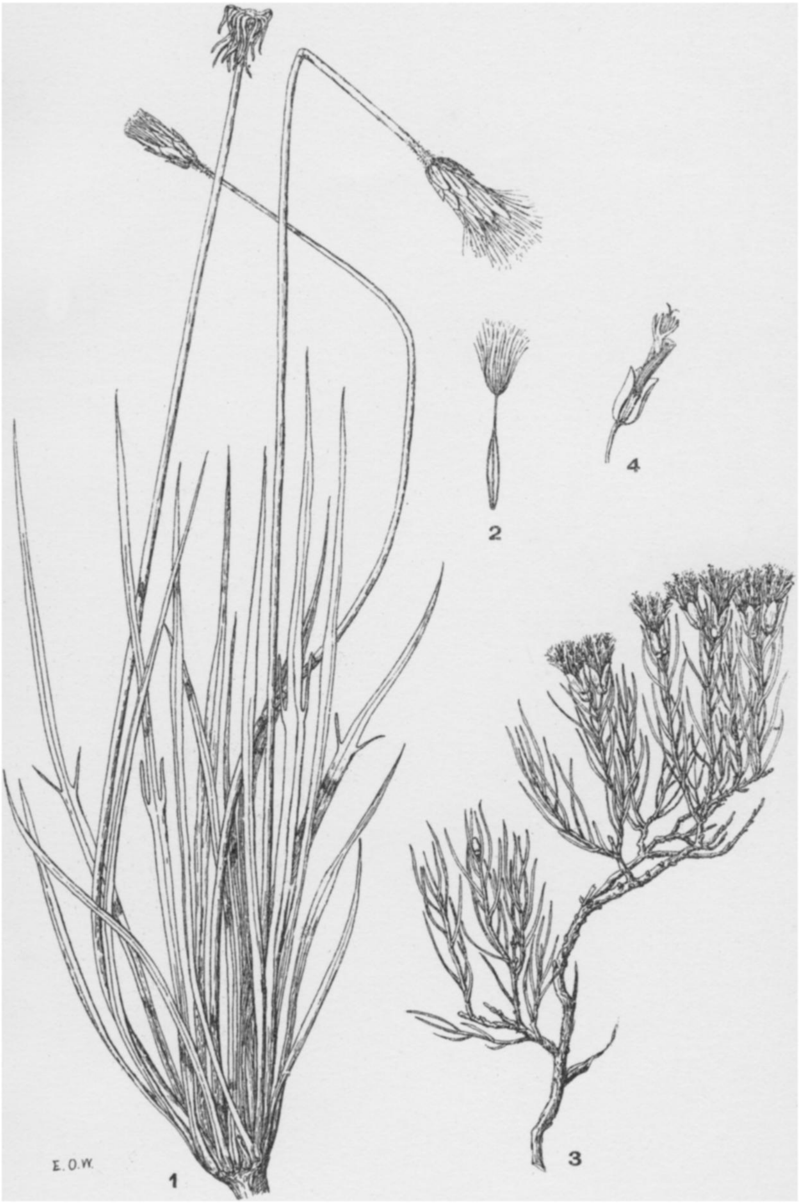

1, 2. AGOSERIS GRAMINIFOLIA Greene.
3, 4. TETRADYMIA FILIFOLIA Greene.

THE HELIOTYPE PRINTING CO., BOSTON

VOL. 25 NO. 3

BULLETIN

OF THE

TORREY BOTANICAL CLUB

MARCH 1898

## New Compositae from New Mexico.

BY EDWARD L. GREENE.

(PLATES 330–334.)

This paper embodies in brief some results of the critical study of a good collection of Compositae made in southeastern New Mexico in the summer of 1897; the special localities being the Sierra Blanca or White Mountain Range, the Organ Mountains, and the plains to the west of these ranges. The collector, Mr. E. O. Wooton, made a wise selection in choosing these little known parts of the vast territory of New Mexico as the field of a season's exploring.

I am not aware that, in the Sierra Blanca, any botanist has preceded him; and the ground being new, and, as a mountainous district, somewhat isolated from all other groups and ranges of New Mexican mountains, a considerable accession of new plants was to have been expected.

It will be noted, however, that the first of the forms here assigned specific rank, is not new, but heretofore has been imperfectly understood, and received as a mere variety of another species..

### COLEOSANTHUS PETIOLARIS (Gray).

Resembling *C. grandiflorus*, but taller and loosely branching the inflorescence lax and leafy; stem and branches puberulent foliage nearly glabrous, pellucid-glandular, thin membranous, the leaf-outline hastate-deltoid, usually with a long acumination,

[Issued March 19.]

the petioles slender, often nearly as long as the lamina: heads few and nodding in scattered small cymes: short oval and oblong outer bracts of the involucre obtuse, but caudate with a long slender herbaceous tip.

Organ Mountains, Sept. 1 (no. 490). I take this to be identical with *Brickellia grandiflora petiolaris* Gray, but its characters, as above indicated, are numerous. By the texture of its foliage, and the mode of growth, it is wholly distinct from *C. grandiflorus*. Its sufficiently well marked leaf-outline, and the slender petioles, pointed out by Gray, are of less importance than those characters which he did not detect. It is to be regretted that Mr. Wooton's specimens give no indication of what the lower parts of the plant are like, he having furnished us with only the terminal and flowering portion.

### COLEOSANTHUS AMBIGENS.

Apparently herbaceous, 2° high or more, simple up to the rather strict and thyrsiform panicle of middle-sized heads; foliage green and seeming glabrous, but sparsely scabrous-puberulent under a lens: lowest leaves opposite, the pairs remote, very thin, deltoid-ovate, 2′ or 3′ long, acute, coarsely serrate-toothed, the upper and those subtending the branches of the panicle alternate, all with slender and rather long petioles: involucres ¼′ high, strongly imbricated, their bracts from ovate to oblong-linear obtuse and pointless, strongly nerved and tomentose-ciliate: flowers ochroleucous or cream-colored: achenes short for the genus, with 5 prominent angles and as many intervening ribs, not glandular, the angles and ribs scabrous-serrulate. [Plate 330.]

White Mountains, August 13 (no. 335). Plant with something of the aspect of *C. grandiflorus*; its root-growth not indicated; but very distinct in its short and much imbricated involucre of bracts passing very gradually from short to long, and also in the character of the achenes, which are far more like those of *Eupatorium*, the alternate angles being reduced to merely acute striae; they are almost those of *E. Fendleri*, yet in habit the plant is wholly *Coleosanthus*.

### LACINIARIA LANCIFOLIA.

Stout, 3° high, glabrous: lowest leaves nearly 1° long, linear-lanceolate, 1-nerved, middle cauline more than half as long, broad in proportion and lanceolate, scarcely 3-nerved, *i. e.*, the lateral nerves indistinct: spike of heads rather loose, 6′–10′ long, the campanulate involucres hardly ½′ high; bracts many and imbricated, oblong but with triangular-ovate acutish and wholly herbaceous but purple tips, the margin ciliolate; pappus short and subplumose, little longer than the pubescent striate achenes.

In marshy land at 6800 feet in the White Mountains, July 31 (no. 254). Plant with much the general aspect of *L. spicata*, but very distinct in the character of its involucre, the bracts of which in *L. spicata* are elongated and conspicuously striate, ending in a short rounded and scarious-margined tip. In the new species the bracts are so short and closely imbricated that no striate base is exposed, and the wholly herbaceous and marginless tips are somewhat ovate and acute.

### ASTER HESPERIUS WOOTONII.

Plant of ampler foliage than in the type; inflorescence decidedly corymbose-paniculate; bracts of involucre in several series, but nearly equal, the outer herbaceous and slightly broader than the inner, all acute: lower cauline leaves spatulate-lanceolate, 4′ or 5′ long, the upper narrowly lanceolate, all serrulate, scabrous on the margin: branches strongly pubescent in lines.

Eagle Creek, White Mountains, Lincoln County, August 12 (no. 329), at 7000 feet altitude.

### CHRYSOPSIS FULCRATA.

Tufted perennial, the stoutish erect stems 2° or 3° high, the whole herbage green, papillose-granular and perhaps somewhat viscid beneath a minute scabrous pubescence, some rather stiffly hirsute longer hairs clothing the stems and leaf-margins: leaves oblong, obtuse, sessile, ascending, only about an inch long, venulose: heads rather large, short-peduncled, subcorymbose at summit of stem and branches, the involucres subtended and partly concealed by one or more leafy bracts; proper involucral bracts in few series: rays numerous and large, golden yellow: achenes silky; outer pappus very conspicuous, of 20–25 linear-acuminate paleae.

Collected at various places in the White Mountains and Organ Mountains at elevations of 6000 to 6500 feet (nos. 510, 511, 512).

### ERIOCARPUM SERRATUM.

Tufted perennial, the erect somewhat corymbosely branched stems 1½° high; the whole plant scabrous-puberulent; leaves

1′ long or more, from spatulate-oblong to linear-oblong, obtuse, closely and evenly spinulose-serrate: heads rather large, solitary at the ends of the branchlets: involucre somewhat hemispherical, nearly ¾′ broad, its coriaceous herbaceous-tipped bracts closely imbricated in many series: rays many, rose-colored on lower side, white on upper: achenes silky-pubescent, scarcely compressed, indistinctly angled: pappus of unequal coarse and rather rigid bristles which are merely scabrous, the longest little longer than the achene. [Plate 331.]

White Mountains, at 6800 feet, July 30 (no. 251). A fine and strongly characterized new species, more closely resembling a *Grindelia* than is the type of the genus, *E. grindeloides;* perhaps nearly related to the annual *E. rubiginosum;* also unquestionably akin to *E. gymnocephalum* by its partially reddish rayflowers.

### ERIOCARPUM WOOTONII.

Perennial, diffusely branched and depressed, the branches 8′–10′ long, canescent with a soft loose somewhat cottony pubescence, not glandular: leaves small and narrow, of a linear rachis and several rather remote pairs of short divaricate spinulose-tipped lobes: heads terminating numerous short leafy branchlets: involucre broad, its bracts with cottony-tomentulose green tips: rays deep yellow. [Plate 330.]

On the White Mountains, at 6500 feet elevation; the specimens barely in flower Aug. 19 (no. 518). Species with habit of *E. spinulosum,* foliage more like that of *E. australe,* the pubescence wholly peculiar.

### GRINDELIA SCABRA.

Biennial, 2° high, the rather slender reddish stem and branches and thin foliage scabrous-pubescent: lowest leaves oblanceolate, petiolate, those of the branches oblong, sessile by a broader and somewhat clasping base: all sharply but not deeply spinulose-serrate: hemispherical involucre of very numerous bracts, all with subulate-alternate suberect herbaceous tips: rays of a deep golden yellow: achenes very small, somewhat compressed-pyriform, smooth, or with two or more striae, destitute of terminal crown or teeth, and with but a minute areola: bristles of pappus 2 or 3, scabrous-serrulate on the margins below. [Plate 332.]

White Mountains at 6300 feet, August 21 (nos. 224, 372).

## Erigeron arenarius.

Annual, slender, weak and diffusely branching from the base, the branches 1° long or less; herbage minutely and softly pubescent: leaves mostly 1′ long, spatulate-linear, obtuse: heads terminating slender pedunculiform sparingly leafy-bracted branchlets; involucre 2″ or 2½″ high, the equal bracts roughly hirsutulous: rays 40 or more, not very narrow, white to lavender: achenes elongated and linear, little compressed; pappus of some 20 very delicate bristles deciduous from a callous ring.

Sand hills near Mesilla, June 17 (no. 23). With the aspect of some forms of *E. divergens*, but more allied to *E. Bellidiastrum;* the pappus perfectly simple.

## Erigeron formosissimus.

Perennial, somewhat tufted, 1°–1½° high, the stems erect or at base slightly decumbent: basal leaves oblanceolate, obtuse, entire, 1-nerved, 2½′–5′ long including the long-winged petiole, green and glabrous on both sides, ciliolate-margined; those of the stem 1′ long or more, oblong-lanceolate, acute, sessile: stem somewhat hirsute-pubescent, ending in one or two very large heads: involucre low-hemispherical, ¾′ broad, the biserial equal bracts with spreading green tips and with little pubescence: rays 100 or more, narrow, almost ¾′ long, from light rose-color to deep purple. [Plate 332.]

The type from an altitude of 10000 feet on Sierra Blanca Peak of the White Mountains, Aug. 16 (no. 352). A taller stalk of the same was collected by the present writer, on northward slopes of the Pinos Altos Mountains in September, 1880, and distributed for *A. glabellus*, a species to which this is certainly allied. The expanded heads are nearly two inches in diameter. In the far northern species, *E. glabellus*, they are barely ¾ of an inch, and the rays are much narrower, white, or pale; the heads being several and corymbose.

## WOOTONIA gen. nov.

Opposite-leaved and dichotomously branched annual, of the Coreopsideae. Heads solitary in all the forks. Involucre simple, of a series of distinct and equal oblong erect bracts; or occasionally with vestiges of an outer involucre in the form of one or more narrow and spreading bractlets. Rays none. Disk-flowers 5 or 6, minute. Achenes linear, compressed but never thin, with two thickish and obtuse angles and several intervening striae; the outer achenes glabrous, surmounted by a pair of stout divergent smooth and persistent awns which are channeled above, and runcinate at tip; inner achenes a fourth shorter than the others, pubescent and somewhat rugose-tuberculate, their awns shorter, stouter and divaricate.

### Wootonia parviflora.

Stoutish annual 1° or 2° high; leaves ternately dissected into elongated and narrowly linear segments, the whole herbage glabrous: heads very small, on filiform peduncles, these much elongated in fruit and spreading or deflexed. [Plate 333.]

On plains near the White Sands, Doña Ana County, August 25 (no. 393). A quite distinct new type, about equally allied to *Bidens* and *Cosmos*, but impossible to be referred to either.

### Laphamia cernua.

Low and herbaceous stems from a short ligneous crown, only 3′ or 4′ high, with 3 or 4 pairs of rather ample leaves and a solitary terminal short-peduncled large head at first nodding and concealed beneath the leaves; plant nearly glabrous and slightly fleshy: leaves round ovate to deltoid-ovate, ¾′ long and as broad, coarsely and quite evenly dentate, the petiole rather longer than the blade: campanulate involucre nearly ½′ high: flowers dull orange yellow: rays none: corollas with short proper tube and long cylindric throat: outer and fertile achenes compressed, callous-margined, nerveless, puberulent, the inner infertile ones merely 4-angled; pappus in all of numerous very unequal barbellate bristles, the longest about equaling the proper tube of the corolla. [Plate 333.]

Organ Mountains, at 6500 feet altitude, September 4 (no. 476). A very distinct species, notable for its large solitary nodding heads.

### Senecio Wootonii.

Stout, perennial, 2° high, leafy below, naked and loosely corymbose-panicled above, the whole plant glabrous from the first and glaucescent: leaves broadly or more narrowly lanceolate, 6′–10′ long, including the long winged and basally dilated petiole, the margins coarsely and obtusely dentate or serrate-toothed: heads ½′ high, numerous, erect, on long naked or linear-bracted peduncles; bracts of the campanulate involucre few and broad, thin-margined, acute: rays few, short, deep yellow: achenes columnar, glabrous, light-colored. [Plate 331.]

At an altitude of 7000 feet on the White Mountains, August 15 (no. 491). Not intimately allied to any other species; the glabrous glaucescent herbage somewhat like that of *S. microdontus*, but inflorescence and large heads of the group to which *S. Bigelovii* and its allies belong.

### TETRADYMIA FILIFOLIA.

Compact low shrub, with short very leafy branches, but no fascicled foliage: leaves all filiform, ½′ to 1½′ long, ascending or suberect, permanently tomentose, as are all the leafy branchlets: heads few, terminating all the branchlets, 4-flowered; involucre short, of two oblong-linear and two oblong-ovate bracts, all obtuse and with arachnoid-ciliate margins: achenes glabrous; pappus long, of rather copious bristles, all abruptly dilated and serrulate at tip. [Plate 334.]

On Round Mountain of the White Mountain Range, at 5000 feet, July 21 (no. 183). Very distinct species, quite isolated from the rest of the genus geographically.

### CARDUUS PERENNANS.

Rather slender, 3° high, from apparently deep-seated perennial roots, the herbage arachnoid-woolly when young, the maturer foliage glabrate above, white-wooly beneath: stem and few flowering branches leafy, even up to the few and scarcely pedunculate heads: lowest leaves lanceolate, subentire and spinose-ciliate‘ the others with shallow lobes: heads 1½′ high, ovate, the coriaceous and not strongly imbricated bracts arachnoid-wooly along the margin only, showing a narrow glutinous spot, and tipped with a stout somewhat spreading spine; flowers red or purplish: anther-tips attennate-subulate: some of the outer pappus bristles not at all plumose, and only sparingly barbellulate.

White Mountains, at 7000 feet, Aug. 12 (no. 326) and Organ Mountains, July 7. One of the very few perennial species indigenous to North America. In aspect more like *C. Arizonicus* than any other.

### PTILORIA NEO-MEXICANA.

Tufted and much branched perennial, the slender reedy branches 1° to 2° high, clothed with a few linear and linear-subulate entire leaves and leafy bracts, the whole plant glabrous and glaucous: scattered involucres less than ½′ high, 5-flowered: achenes columnar and pentagonal, covered with minute sharp interrupted transverse rugosities; pappus white, of about 15 bristles loosely long-plumose from toward the base, the basal part naked and scabrous and slightly thickened.

Mesas near Las Cruces, July 2 (no. 482). A species that may include much of the southern so-called *Stephanomeria minor.*

### AGOSERIS GRAMINIFOLIA.

Perennial, 1° high or less, glaucous, the foliage glabrous, but scapes sparsely pilose below, woolly under the glabrous involucre: leaves all very narrowly linear, entire, acuminate: heads 1′ high, narrow and few-flowered: bracts of the involucre in about 3 series, ovate-lanceolate to linear-lanceolate: achenes gradually narrowed to a beak shorter than the body; pappus white, rather coarse, hardly scabrous. [Plate 334.]

At 7000 feet altitude in the White Mountains, in moist land, August 13 (no. 513), in fruit only.

### Explanation of Plates.

PLATE 330, 1 and 2. *Eriocarpum Wootonii* Greene. 1. A portion of a plant half natural size. 2. Involucral bracts and flowers natural size. 3 and 4. *Coleosanthus ambigens* Greene. 3. A portion of a plant half natural size. 4. Involucral bracts, flower and achene natural size; also achene × 2.

PLATE 331, 1 and 2. *Senecio Wootonii* Greene. 1. Part of plant half natural size. 2. Involucral bract and ray flower natural size. 3 and 4. *Eriocarpum serratum* Greene. 3. A portion of a plant half natural size. 4. Ray-flower and achene natural size.

PLATE 332, 1 and 2. *Grindelia scabra* Greene. 1. A portion of a plant half natural size. 2. Involucral bract, ray flower and achene natural size. 3 and 4. *Erigeron formosissimus* Greene. 3. A portion of a plant half natural size. 4. Involucral bract, ray flower and achene natural size.

PLATE 333, 1 and 2. *Wootonia parviflora* Greene. 1. Entire plant half natural size. 2. Head of flowers and achenes natural size. 3 and 4. *Laphamia cernua* Greene. 3. Part of the plant natural size. 4. Involucral bract and flower natural size.

PLATE 334, 1 and 2. *Agoseris graminifolia* Greene. 1. A portion of a plant half natural size. 2. Achene natural size. 3 and 4. *Tetradymia filifolia* Greene. 3. Small branch of a plant half natural size. 4. Head, with one bract and three flowers removed, natural size.